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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,117	07/31/2003	Goichi Katayama	FS.20113US0A	7749

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EXAMINER

CHANG, CHING

ART UNIT	PAPER NUMBER
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3748

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/631,117	KATAYAMA, GOICHI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ching Chang	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-11, 13-16 and 18 is/are rejected.
- 7) ☒ Claim(s) 5-7, 12, 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>07/31/2003</u> . | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. ***Claims 1-4, 8-11, 13-14, 15-16, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Kanno (US Patent No. 6,672,283).***

Kanno discloses an internal combustion engine (32) for an outboard motor (30) comprising an engine body (124) having at least an outer surface that defines an outer area next to thereto, an output shaft (118) extending generally vertically through the engine body, an air intake system (126, 128, 130, 140, 144) arranged to deliver air to a combustion chamber (110) of the engine, the air intake system having an intake valve (134) movable between a closed position at which the air is not allowed to move to the combustion chamber and an open position at which the air is allowed to move to the combustion chamber, an exhaust system arranged to route exhaust gases in the combustion chamber to an external location of the engine, the exhaust system having an exhaust valve movable between a closed position at which the exhaust gases are

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not allowed to move to the external location and an open position at which the exhaust gases are allowed to move to the external location (See Col. 10, line 19 through line 47), at least one camshaft (172, 174) actuating the intake valve or the exhaust valve, the camshaft extending generally vertically through the engine body and toward the outer area beyond the outer surface, a drive mechanism (186) arranged to drive the camshaft, at least a portion of the drive mechanism being disposed in the outer area, a hydraulically operated change mechanism (240) arranged to change an angular position of the camshaft relative to the output shaft, and a control valve unit (246, 314) configured to control the change mechanism, the control valve unit at least in part being disposed within the outer area (See Figs. 2-5, 7, and 9); wherein the control valve unit is positioned generally at the same level as the drive mechanism from the outer surface; wherein the drive mechanism comprises a flexible transmitter (194) extends around the output shaft and the camshaft such that the output shaft drives the camshaft through the transmitter, the control valve unit is positioned generally at the same level as the transmitter; wherein the transmitter forms a loop, the control valve unit is disposed out of the loop (See Figs. 3-4); the said engine additionally comprising a fluid passage through which a hydraulic working fluid moves between the control valve unit and the change mechanism, the engine body having a member (108) defining the outer surface, the member internally forms at least a portion of the fluid passage (See Figs. 7, and 9); wherein the camshaft actuates the intake valve; wherein the engine powers a marine propulsion device (222, 232, 226, 228); wherein the outer surface is a top surface of the engine body, and the outer area is a top area that extends generally above the top

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surface; wherein the control valve unit comprises a spool valve (314) that has a longitudinal axis that extends generally horizontally along the outer surface.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

**3. *Claims 1-4, 8-11, 13-14, 15-16, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Katayama (US Patent No. 6,708,659).***

Katayama discloses an internal combustion engine (32) for an outboard motor (30) comprising an engine body (124) having at least an outer surface that defines an outer area next to thereto, an output shaft (118) extending generally vertically through the engine body, an air intake system (126, 128, 130, 140, 144) arranged to deliver air to a combustion chamber (110) of the engine, the air intake system having an intake valve (134) movable between a closed position at which the air is not allowed to move to the combustion chamber and an open position at which the air is allowed to move to the combustion chamber, an exhaust system arranged to route exhaust gases in the combustion chamber to an external location of the engine, the exhaust system (See Fig. 9) having an exhaust valve (156) movable between a closed position at which the exhaust gases are not allowed to move to the external location and an open position at

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which the exhaust gases are allowed to move to the external location, at least one camshaft (172, 174) actuating the intake valve or the exhaust valve, the camshaft extending generally vertically through the engine body and toward the outer area beyond the outer surface, a drive mechanism (186) arranged to drive the camshaft, at least a portion of the drive mechanism being disposed in the outer area, a hydraulically operated change mechanism (240) arranged to change an angular position of the camshaft relative to the output shaft, and a control valve unit (246, 314) configured to control the change mechanism, the control valve unit at least in part being disposed within the outer area (See Figs. 2-6, and 8); wherein the control valve unit is positioned generally at the same level as the drive mechanism from the outer surface; wherein the drive mechanism comprises a flexible transmitter (194) extends around the output shaft and the camshaft such that the output shaft drives the camshaft through the transmitter, the control valve unit is positioned generally at the same level as the transmitter; wherein the transmitter forms a loop, the control valve unit is disposed out of the loop (See Figs. 3-4); the said engine additionally comprising a fluid passage through which a hydraulic working fluid moves between the control valve unit and the change mechanism, the engine body having a member (108) defining the outer surface, the member internally forms at least a portion of the fluid passage (See Figs. 6, and 8); wherein the camshaft actuates the intake valve; wherein the engine powers a marine propulsion device (222, 232, 226, 228); wherein the outer surface is a top surface of the engine body, and the outer area is a top area that extends generally above the top

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surface; wherein the control valve unit comprises a spool valve (314) that has a longitudinal axis that extends generally horizontally along the outer surface.

The applied reference has a common assignee and a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

**4. *Claims 1-4, 8-11, 13-14, 15-16, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Fukuda et al. (US Patent No. 6,582,262).***

Fukuda discloses an internal combustion engine (2) for an outboard motor (1) comprising an engine body (21, 22, 23, 24) having at least an outer surface that defines an outer area next to thereto, an output shaft (3) extending generally vertically through the engine body, an air intake system (See Col. 5, line 64 through Col. 6, line 54) arranged to deliver air to a combustion chamber (27) of the engine, the air intake system having an intake valve (31a, 31b) movable between a closed position at which the air is not allowed to move to the combustion chamber and an open position at which the air is allowed to move to the combustion chamber, an exhaust system arranged to route exhaust gases in the combustion chamber to an external location of the engine, the exhaust system having an exhaust valve (33a, 33b) movable between a closed

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position at which the exhaust gases are not allowed to move to the external location and an open position at which the exhaust gases are allowed to move to the external location (See Col. 5, line 50 through line 63), at least one camshaft (32a, 32b, 34a, 34b) actuating the intake valve or the exhaust valve, the camshaft extending generally vertically through the engine body and toward the outer area beyond the outer surface, a drive mechanism (51) arranged to drive the camshaft, at least a portion of the drive mechanism being disposed in the outer area, a hydraulically operated change mechanism (85a, 85b) arranged to change an angular position of the camshaft relative to the output shaft, and a control valve unit (84) configured to control the change mechanism, the control valve unit at least in part being disposed within the outer area (See Figs. 3-5); wherein the control valve unit is positioned generally at the same level as the drive mechanism from the outer surface; wherein the drive mechanism comprises a flexible transmitter (56) extends around the output shaft and the camshaft such that the output shaft drives the camshaft through the transmitter, the control valve unit is positioned generally at the same level as the transmitter; wherein the transmitter forms a loop, the control valve unit is disposed out of the loop (See Fig 4); the said engine additionally comprising a fluid passage through which a hydraulic working fluid moves between the control valve unit and the change mechanism, the engine body having a member (23) defining the outer surface, the member internally forms at least a portion of the fluid passage (See Figs. 5-7); wherein the camshaft actuates the intake valve; wherein the engine powers a marine propulsion device (13, 14, 15, 16); wherein the outer surface is a top surface of the engine body, and the outer area is a top area



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that extends generally above the top surface; wherein the control valve unit comprises a spool valve (115) that has a longitudinal axis that extends generally horizontally along the outer surface.

**5. *Claims 1-4, 8-11, 13-14, 15-16, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Katayama (US Patent No. 6,439,938).***

Katayama discloses an internal combustion engine (32) for an outboard motor (30) comprising an engine body (124) having at least an outer surface that defines an outer area next to thereto, an output shaft (118) extending generally vertically through the engine body, an air intake system (126, 128, 130, 140, 144) arranged to deliver air to a combustion chamber (110) of the engine, the air intake system having an intake valve (134) movable between a closed position at which the air is not allowed to move to the combustion chamber and an open position at which the air is allowed to move to the combustion chamber, an exhaust system arranged to route exhaust gases in the combustion chamber to an external location of the engine, the exhaust system having an exhaust valve movable between a closed position at which the exhaust gases are not allowed to move to the external location and an open position at which the exhaust gases are allowed to move to the external location (See Col. 7, line 33 through line 49), at least one camshaft (172, 174) actuating the intake valve or the exhaust valve, the camshaft extending generally vertically through the engine body and toward the outer area beyond the outer surface, a drive mechanism (186) arranged to drive the camshaft, at least a portion of the drive mechanism being disposed in the outer area, a

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hydraulically operated change mechanism (240) arranged to change an angular position of the camshaft relative to the output shaft, and a control valve unit (246, 314) configured to control the change mechanism, the control valve unit at least in part being disposed within the outer area (See Figs. 2-5, 7, and 9); wherein the control valve unit is positioned generally at the same level as the drive mechanism from the outer surface; wherein the drive mechanism comprises a flexible transmitter (194) extends around the output shaft and the camshaft such that the output shaft drives the camshaft through the transmitter, the control valve unit is positioned generally at the same level as the transmitter; wherein the transmitter forms a loop, the control valve unit is disposed out of the loop (See Figs. 3-4); the said engine additionally comprising a fluid passage through which a hydraulic working fluid moves between the control valve unit and the change mechanism, the engine body having a member (108) defining the outer surface, the member internally forms at least a portion of the fluid passage (See Figs. 7, and 9); wherein the camshaft actuates the intake valve; wherein the engine powers a marine propulsion device (222, 232, 226, 228); wherein the outer surface is a top surface of the engine body, and the outer area is a top area that extends generally above the top surface; wherein the control valve unit comprises a spool valve (314) that has a longitudinal axis that extends generally horizontally along the outer surface.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

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the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

### ***Allowable Subject Matter***

6. Claims 5-7, 12, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Hiroka et al. (US Patent No. 5,865,655).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ching Chang whose telephone number is (703)306-3478. The examiner can normally be reached on M-Th, 7:00 AM -5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (703)308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner



Ching Chang



THOMAS DENION  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700